CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

ANALYTICAL RESULTS SUMMARY

METALS

PROJECT NAME : ARC HORSESHOE ROAD

CREAMER ENVIRONMENTAL, INC.

215 Union Street

Hackensack, NJ - 07601

Phone No: 201-968-3304

ORDER ID : E3176

ATTENTION : Gary Kowalski

ACCREDITED IN ACCORDANCE WITH nelac

DoD ELAP 306989

Table Of Contents for E3176

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : E3176

Project ID : ARC Horseshoe Road

Client : Creamer Environmental, Inc.

Lab Sample Number	Client Sample Number
E3176-01	BF003(070313)

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 8/13/2013

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Creamer Environmental, Inc.
Project Name: ARC Horseshoe Road
Project # N/A
Chemtech Project # E3176
Test Name: SPLP Mercury

A. Number of Samples and Date of Receipt:
1 Solid sample was received on 07/03/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: SPLP Extraction and SPLP Mercury. This data package contains results for SPLP Mercury.

C. Analytical Techniques:
The analysis of SPLP Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times did not meet for E3176-01----BF003(070313).
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: E3176

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: ZINAL SUTHAR **Date:** 08/13/2013

2nd Level QA Review Signature: _____ **Date:** _____

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.:	E3176	**Order ID:**	E3176
Client:	Creamer Environmental, Inc.	**Project ID:**	ARC Horseshoe Road

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units

Client ID :

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Creamer Environmental, Inc.	Date Collected:	07/03/13
Project:	ARC Horseshoe Road	Date Received:	07/03/13
Client Sample ID:	BF003(070313)	SDG No.:	E3176
Lab Sample ID:	E3176-01	Matrix:	SPLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7439-97-6	Mercury	0.1	U	1	0.092	0.1	0.2	ug/L	08/05/13	08/06/13	SW7470A

Color Before:	Clarity Before:	Texture:
Color After:	Clarity After:	Artifacts:

Comments: SPLP Mercury

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

LAB CHRONICLE

OrderID:	E3176	**OrderDate:**	8/2/2013 11:48:00 AM
Client:	Creamer Environmental, Inc.	**Project:**	ARC Horseshoe Road
Contact:	Gary Kowalski	**Location:**	J51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
E3176-01	**BF003(070313)**	**SPLP**			**07/03/13**			**07/03/13**
			SPLP Mercury	7471A		08/05/13	08/06/13	

SHIPPING DOCUMENTS

~~Received~~

E3176

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. E2828
COC Number 029905

CLIENT INFORMATION (REPORT TO BE SENT TO:)
COMPANY: Creamer Environmental
ADDRESS: 215 Union St
CITY: Hackensack STATE: NJ ZIP: 07601
ATTENTION: 12-2260
PHONE: 201-968-3300 FAX: 201-968 3301

CLIENT PROJECT INFORMATION
PROJECT NAME: ARC Horseshoe Road
PROJECT NO.: 12-2260 LOCATION: Saybeville
PROJECT MANAGER: Gary Kowalski
e-mail: GKowalski@CreamerEnvironmental
PHONE: 201-491-9308 FAX:

CLIENT BILLING INFORMATION
BILL TO: Creamer Environmental PO#:
ADDRESS: 215 Union Street
CITY: Hackensack STATE: NJ ZIP: 07601
ATTENTION: 12-2260 PHONE: 201-968-3300

DATA TURNAROUND INFORMATION
FAX: _____ DAYS *
HARD COPY: _____ DAYS *
EDD: _____ DAYS *
PREAPPROVED TAT: ☐ YES ☒ NO STANDARD
* STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION
☐ LEVEL 1: Results only ☐ Others _____
☐ LEVEL 2: Results + QC
☐ LEVEL 3: Results (plus results raw data) + QC
☐ LEVEL 4: Results + QC (all raw data)
☐ EDD Format: _____

ANALYSIS
1 TCL VOCs
2 TCL SVOCs
3 TAL Metals
4 Cyanide + Mercury
5 TCL Pest + PCB
6 EPH Cat 1
7 Ya-226
8 STLP Metals (Hold)
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	BF003(070313)	Soil		X	7/3/13			X	X	X	X	X	X	X	Hold		
2. *	BF004(070313)	Soil		X	7/3/13			X	X	X	X	X	X	X	Hold		
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES: 1 2 3 4 5 6 7 8 9
COMMENTS — Specify Preservatives: A–HCl B–HNO_3 C–H_2SO_4 D–NaOH E–ICE F–Other

Copy
Original Documents are included in CSF E2828

PS
Signature
8/2/13
Date

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. V. Alhanese	7/3/13 1430	1.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2.		2.
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3.	7.3.13 1520	3. Snehal Mehta

Conditions of bottles or coolers at receipt: ☑ Compliant ☐ Non Compliant
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments:
Cooler Temp. 4c
Ice in Cooler?: Yes

Page ___ of ___

SHIPPED VIA: CLIENT: ☐ HAND-DELIVERED ☐ OVERNIGHT CHEMTECH: ☑ PICKED UP ☐ OVERNIGHT
Shipment Complete: ☑ YES ☐ NO

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

Reginald St-Juste

From: Kowalski, Gary <GKowalski@creamerenvironmental.com>
Sent: Friday, August 02, 2013 11:44 AM
To: Reginald@chemtech.net
Cc: Albanese, Vincent
Subject: RE: E2828 MDLs / Mercury SPL

3 day
Thanks

Gary Kowalski, Project Manager
CREAMER ENVIRONMENTAL, INC. (Headquarters)
215 Union Street
Hackensack, NJ 07601
"New" Direct Dial / E-Fax 201-215-9628
Mobile: 201-376-7153
Headquarters Tel: 201-968-3300
Headquarters Fax: 201-968-3301
www.creamerenvironmental.com

From: Reginald St-Juste [mailto:Reginald@chemtech.net]
Sent: Friday, August 02, 2013 12:41 PM
To: Kowalski, Gary
Cc: Albanese, Vincent
Subject: RE: E2828 MDLs / Mercury SPL
Importance: High

This data package was revised and uploaded on the website for the SVOC compounds mentioned below. A separate work order will be created for the SPLP mercury.

What TAT should we do for the SPLP Mercury?

Regards,
Reginald St-Juste
Project Manager
Tel. 908 728 3147
Email: Reginald@chemtech.net

From: Kowalski, Gary [mailto:GKowalski@creamerenvironmental.com]
Sent: Thursday, August 01, 2013 10:53 AM
To: reginald@chemtech.net

Cc: 'Franco Pugliese'; Albanese, Vincent
Subject: E2828 MDLs / Mercury SPL

Reggie,

The MDL for Benzo(a)pyrene and Dibenzo(a,h)anthracene were 0.090 mg/kg which was over the project standard of 0.05. these need to be rerun with the lower MDL.

The Mercury result for BF003 was 0.32 J which was over the IGW standard of 0.1, this needs to be rerun for SPL.

Please confirm,
Thanks,

Gary Kowalski, Project Manager
CREAMER ENVIRONMENTAL, INC. (Headquarters)
215 Union Street
Hackensack, NJ 07601
"New" Direct Dial / E-Fax 201-215-9628
Mobile: 201-376-7153
Headquarters Tel: 201-968-3300
Headquarters Fax: 201-968-3301
www.creamerenvironmental.com

CHEMTECH 284 Sheffield Street Mountainside,NJ 07092 Tel. 908-789-8900 Fax: 908 789 8922

Laboratory Certification

State	License No.
New Jersey	20012
New York	11376
Connecticut	PH-0649
Florida	E87935
Louisiana	5035
Maryland	296
Massachusetts	M-NJ503
Oklahoma	9705
Pennsylvania	68-548
Rhode Island	LAO00259
Virginia	460220
Texas	T10470448-10-1

Other:

DOD ELAP Certified (L-A-B Accredited), ISO/IEC 17025	L2219
Soil Permit	P330-11-00012
CLP Inorganic Contract	EPW09038
CLP Organic Contract	EPW11030

QA Control Code: A2070148

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

DATA PACKAGE

METALS

PROJECT NAME : ARC HORSESHOE ROAD

CREAMER ENVIRONMENTAL, INC.

215 Union Street

Hackensack, NJ - 07601

Phone No: 201-968-3304

ORDER ID : E3176

ATTENTION : Gary Kowalski

ACCREDITED IN ACCORDANCE WITH nelac

DoD ELAP

CHEMTECH

Table Of Contents for E3176

Table Of Contents for E3176

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : E3176

Project ID : ARC Horseshoe Road

Client : Creamer Environmental, Inc.

Lab Sample Number	Client Sample Number
E3176-01	BF003(070313)

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 8/13/2013

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Creamer Environmental, Inc.
Project Name: ARC Horseshoe Road
Project # N/A
Chemtech Project # E3176
Test Name: SPLP Mercury

A. Number of Samples and Date of Receipt:
1 Solid sample was received on 07/03/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: SPLP Extraction and SPLP Mercury. This data package contains results for SPLP Mercury.

C. Analytical Techniques:
The analysis of SPLP Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis except for E3176-01----BF003(070313).
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: E3176 MATRIX: Solid

METHOD: 7471A

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.			✓
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range.			✓
7.	Sample Duplicate Analysis Met QC Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range.			✓
8.	Digestion Holding Time Met If not met, list number of days exceeded for each sample:		✓	
9.	Analysis Holding Time Met If not met, list those compounds and their recoveries which fall outside the acceptable range. The Holding Times were met for all analysis except for E3176-01----BF003(070313).		✓	

ADDITIONAL COMMENTS:

_____ _____

QA REVIEW Date

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: E3176

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: ZINAL SUTHAR **Date:** 08/13/2013

2nd Level QA Review Signature: _____ **Date:** _____

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

LAB CHRONICLE

OrderID:	E3176	**OrderDate:**	8/2/2013 11:48:00 AM
Client:	Creamer Environmental, Inc.	**Project:**	ARC Horseshoe Road
Contact:	Gary Kowalski	**Location:**	J51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
E3176-01	**BF003(070313)**	**SPLP**			**07/03/13**			**07/03/13**
			SPLP Mercury	7471A		08/05/13	08/06/13	

CHEMTECH

Hit Summary Sheet
SW-846

SDG No.:	E3176	**Order ID:**	E3176
Client:	Creamer Environmental, Inc.	**Project ID:**	ARC Horseshoe Road

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID :									

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Creamer Environmental, Inc.	Date Collected:	07/03/13
Project:	ARC Horseshoe Road	Date Received:	07/03/13
Client Sample ID:	BF003(070313)	SDG No.:	E3176
Lab Sample ID:	E3176-01	Matrix:	SPLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7439-97-6	Mercury	0.1	U	1	0.092	0.1	0.2	ug/L	08/05/13	08/06/13	SW7470A

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments: SPLP Mercury

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Mercury	3.92	4.0	98.0	90 - 110	CV	08/06/2013	10:50	LB67182
CCV01	Mercury	5.03	5.0	100.6	90 - 110	CV	08/06/2013	10:55	LB67182
CCV02	Mercury	5.02	5.0	100.4	90 - 110	CV	08/06/2013	11:15	LB67182
CCV03	Mercury	5.10	5.0	102.0	90 - 110	CV	08/06/2013	11:32	LB67182
CCV04	Mercury	5.05	5.0	101.0	90 - 110	CV	08/06/2013	11:43	LB67182

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Initial Calibration Source: PLASMA-PURE

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Mercury	0.18	0.2	90.0	70 - 130	CV	08/06/2013	10:58	LB67182

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals

- 3a -
INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	MDL	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Mercury	0.09	+/-0.20	U	0.09	0.20	CV	08/06/2013	10:53	LB67182
CCB01	Mercury	0.09	+/-0.20	U	0.09	0.20	CV	08/06/2013	10:57	LB67182
CCB02	Mercury	0.09	+/-0.20	U	0.09	0.20	CV	08/06/2013	11:17	LB67182
CCB03	Mercury	0.09	+/-0.20	U	0.09	0.20	CV	08/06/2013	11:33	LB67182
CCB04	Mercury	0.09	+/-0.20	U	0.09	0.20	CV	08/06/2013	11:45	LB67182

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Instrument: CV2

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	MDL ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
EXTBLK(8/2/13)		**TCLP**		**Batch Number:**		**PB71498**		**Prep Date:**	**08/05/2013**	
	Mercury	0.915	<2.000	U	0.915	2.000	CV	08/06/2013	11:09	LB67182
PB71498BL		**WATER**		**Batch Number:**		**PB71498**		**Prep Date:**	**08/05/2013**	
	Mercury	0.092	<0.200	U	0.092	0.200	CV	08/06/2013	11:05	LB67182

CHEMTECH

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: _____ **SDG No.:** _____

Contract: _____ **Lab Code:** _____ **Case No.:** _____ **SAS No.:** _____

ICS Source: _____ **Instrument ID:** _____

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window	Analysis Date	Analysis Time	Run Number

METAL QC DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Creamer Environmental, Inc. **level:** low **sdg no.:** E3176

contract: CREA02 **lab code:** CHEM **case no.:** E3176 **sas no.:** E3176

matrix: WATER **sample id:** E3183-02 **client id:** SW-03-080213S

Percent Solids for Sample: 0 **Spiked ID:** E3183-02S **Percent Solids for Spike Sample:** 0

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	ug/L	49 - 128	3.6400		0.0915	U	4.00	91.0		CV

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metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Creamer Environmental, Inc. **level:** low **sdg no.:** E3176

contract: CREA02 **lab code:** CHEM **case no.:** E3176 **sas no.:** E3176

matrix: WATER **sample id:** E3183-02 **client id:** SW-03-080213SD

Percent Solids for Sample: 0 **Spiked ID:** E3183-02SD **Percent Solids for Spike Sample:** 0

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	ug/L	49 - 128	3.5800		0.0915	U	4.00	89.5		CV

CHEMTECH

Metals
- 5b -

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: Creamer Environmental, Inc. **Level:** LOW **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Matrix: WATER **Sample ID:** E3183-02 **Client ID:** SW-03-080213D

Percent Solids for Sample: 0 **Duplicate ID** E3183-02D **Percent Solids for Spike Sample:** 0

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/L	20	0.0915	U	0.0915	U			CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Creamer Environmental, Inc. **Level:** LOW **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Matrix: WATER **Sample ID:** E3183-02 **Client ID:** SW-03-080213SD

Percent Solids for Sample: 0 **Duplicate ID** E3183-02SD **Percent Solids for Spike Sample:** 0

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/L	20	3.6400		3.5800		1.7		CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB71498BS							
Mercury	ug/L	4.000	3.510		87.8	67 - 127	CV

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Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

SW-03-080213L

Lab Name: Chemtech Consulting Group **Contract:** CREA02

Lab Code: CHEM **Case No.:** E3176 **SAS No.:** E3176 **SDG No.:** E3176

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/l

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Mercury	0.09	U	0.46	U			CV

METAL PREPARATION & INSTRUMENT DATA

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Metals

- 10 -
METHOD DETECTION LIMITS

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Instrument ID: CV2 **Date:** 01/15/2009 **Preparation Method:**

Analyte	Wave- length (nm)	MDL ug/L	CRQL ug/L	Date: 01/15/2009
Matrix Category: **LIQUID**				
Mercury	253.70	0.0915	0.2000	

CHEMTECH

Metals

- 12 -

LINEAR RANGES

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Case No.:** E3176 **SAS No.:** E3176

Instrument ID: **Date:**

Analyte	Integration Time (sec)	LDR ug/L

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Creamer Environmental, Inc. **SDG No.:** E3176

Contract: CREA02 **Lab Code:** CHEM **Method:** CV

Case No.: E3176 **SAS No.:** E3176

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB71498**						
E3176-01	BF003(070313)	SAM	SPLP	08/05/2013	30.00	30.0	
E3183-02D	SW-03-080213D	DUP	WATER	08/05/2013	30.0	30.0	
E3183-02S	SW-03-080213S	MS	WATER	08/05/2013	30.0	30.0	
E3183-02SD	SW-03-080213SD	MSD	WATER	08/05/2013	30.0	30.0	
EXTBLK(8/2/13)	EXTBLK(8/2/13)	MB	TCLP	08/05/2013	3.0	30.0	
PB71498BL	PB71498BL	MB	WATER	08/05/2013	30.0	30.0	
PB71498BS	PB71498BS	LCS	WATER	08/05/2013	30.0	30.0	

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Metals
- 14 -
ANALYSIS RUN LOG

Client: Creamer Environmental, Inc. **Contract:** CREA02

Lab Code: CHEM **Case No.:** E3176 **SAS No.:** E3176 **SDG No.:** E3176

Instrument ID Number: CV2 **Method:** CV **Run Number:** LB67182

Start Date: 08/06/2013 **End Date:** 08/06/2013

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Std01Rep1	1	1035																X									
Std02Rep1	1	1037																X									
Std03Rep1	1	1038																X									
Std04Rep1	1	1041																X									
Std05Rep1	1	1043																X									
Std06Rep1	1	1045																X									
ICV01	1	1050																X									
ICB01	1	1053																X									
CCV01	1	1055																X									
CCB01	1	1057																X									
CRI01	1	1058																X									
PB71498BL	1	1105																X									
PB71498BS	1	1106																X									
EXTBLK(8/2/13)	1	1109																X									
CCV02	1	1115																X									
CCB02	1	1117																X									
BF003(070313)	1	1122																X									
SW-03-080213D	1	1125																X									
SW-03-080213S	1	1127																X									
SW-03-080213SD	1	1129																X									
CCV03	1	1132																X									
CCB03	1	1133																X									
SW-03-080213A	1	1136																									
SW-03-080213L	5	1137																X									
CCV04	1	1143																X									
CCB04	1	1145																X									

METAL
RAW DATA

LB67182 CV2

CHEMTECH 284 Sheffield Street Mountainside, NJ 07092

MERCURY ANALYSIS LOGBOOK

Date	Case Number	Batch Number	Start Time	BLK	STD1	STD2	STD3	STD4
7/24/13(7476)	E2998	PB71183	10:52	13385	35011	231440	4079920	6594435
	E3001							
	E3005							
	E3014							
7/24/13(7477)	E3050	PB71246	10:26	4233	25705	216777	4227741	6241775
	E3051							
	E3054							
7/24/13(7478)	E3044	PB71254	15:25	6605	25796	274726	538823	706208
7/29/13(7472)	E3063	PB71286	12:09	20511	35861	207182	4015O3	5706764
	E3075							
7/30/13(7479)	E3076	PB71333	10:42	-8573	9335	218775	4227178	6316714
	E3079							
	E3080							
	E3085							
7/31/13(7480)	E3076	PB71369	11:28	11975	25619	211103	4111698	6222067
8/1/13(7476)	E3113	PB71391	9:07	6248	24451	209241	4103O4	596469
	E3125							
	E3127							
8/2/13(7481)	E3156	PB71432	10:29	9438	26805	218591	4299471	6339338
8/5/13(7476)	E3128	PB71460	11:28	14693	33554	220502	4107143	5918287
	E3146							
	E3149							
	E3174							
8/5/13(2451)	E3161	PB71459	13:15	11318	29114	213500	3994479	601612
8/6/13(7476)	E3160	PB71498	10:35	6089	23903	209499	3964475	6020248
	E3175							
	E3176							
	E3183							
	E3185							
	E3187							

QA Control # A3040930

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MERCURY ANALYSIS LOGBOOK

STD 5	End Time	Correlation Coeficient	Stannous Chloride Prep log #	Comment	Analyst	Supervisor Signature
8147S6	12:39	0.9984158	MP17122		JR	
					JR	
					JR	
					JR	
8241223	11:59	0.999939	MP17158		JR	
					JR	
					JR	
10313149	15:54	0.9998854	MP17158	ICVIB - 79 CCVIB - 87 - 88	JR	
740718	13:41	0.999627	MP17174		JR	
					JR	
838645	12:22	0.9997789	MP17190		JR	
					JR	
					JR	
					JR	
8009121	12:22	0.9999786	MP17207		JR	
806656	10:21	0.9998898	MP17224		JR	
					JR	
					JR	
833618	11:25	0.999952	MP17256		JR	
801807	12:44	0.999896	MP17287		JR	
					JR	
					JR	
					JR	
793657	14:09	0.999946	MP17287		JR	
778258	11:45	0.999786	MP17303		JR	
					JR	
					JR	
					JR	
					JR	
					JR	

JR 8/6/13

QA Control # A3040930

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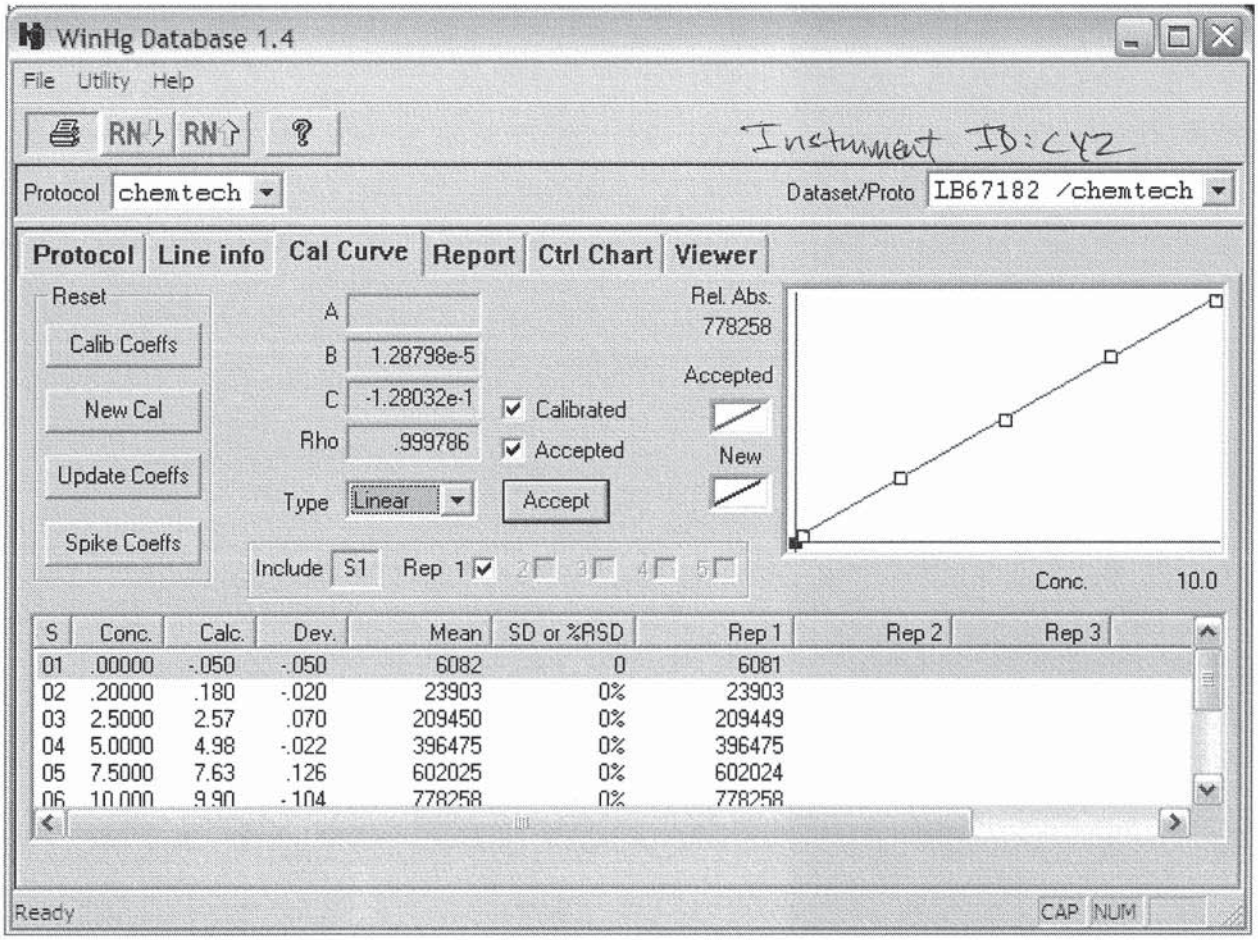
JR
8/6/13



```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-------------------------------------------------------------------------------

*** Standard: 1 Rep: 1 S0.0        Seq:  0       10:35:11 06 Aug 13   HG

Hg    .000    ppb       6081                                                =

*** Standard: 2 Rep: 1 S0.2        Seq:  1       10:37:11 06 Aug 13   HG

Hg    .200    ppb       23903                                               =

*** Standard: 3 Rep: 1 S2.5        Seq:  2       10:38:52 06 Aug 13   HG

Hg    2.50    ppb       209449                                              =

*** Standard: 4 Rep: 1 S5.0        Seq:  3       10:41:22 06 Aug 13   HG

Hg    5.00    ppb       396475                                              =

*** Standard: 5 Rep: 1 S7.5        Seq:  4       10:43:58 06 Aug 13   HG

Hg    7.50    ppb       602024                                              =

*** Standard: 6 Rep: 1 S10.0       Seq:  5       10:45:43 06 Aug 13   HG

Hg    10.0    ppb       778258                                              =

*** Sample ID: ICV                 Seq:  6       10:50:46 06 Aug 13   HG
                              ICV
Hg    3.92    ppb        .000      3.92                                       =
===============================================================================
*** Sample ID: ICB                 Seq:  7       10:53:19 06 Aug 13   HG
                              ICB
Hg   -.121    ppb        .000     -.121                                       =

*** Check Standard: 2  Ck25.0ppb   Seq:  8       10:55:10 06 Aug 13   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          101.     5.03    5.00  ppb         .000                          =

*** Check Standard: 1  Ck10.0ppb   Seq:  9       10:57:00 06 Aug 13   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg         -.096     .200     ppb         .000                               =

*** Sample ID: CRA                 Seq:  10      10:58:45 06 Aug 13   HG
                              CRA
Hg    .182    ppb        .000      .182                                       =
===============================================================================
*** Sample ID: HIGH STD            Seq:  11      11:00:34 06 Aug 13   HG
                          HIGH STD
Hg    9.82    ppb        .000      9.82                                       =
===============================================================================
*** Sample ID: CHK STD             Seq:  12      11:03:24 06 Aug 13   HG
                          CHK STD
Hg    6.93    ppb        .000      6.93                                       =
===============================================================================
*** Sample ID: PB71498BL           Seq:  13      11:05:04 06 Aug 13   HG
                              PBW
Hg   -.076    ppb        .000     -.076                                       =
===============================================================================
```

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-------------------------------------------------------------------------------

*** Sample ID: PB71498BS              Seq:  14     11:06:47 06 Aug 13   HG
                            LCSW
Hg    3.51    ppb       .000      3.51
                                                                        =
================================================================================
*** Sample ID: PB71473EB              Seq:  15     11:09:11 06 Aug 13   HG
                          Fluid1(8/2/13)
Hg   -.110    ppb       .000     -.110
                                                                        =
================================================================================
*** Sample ID: PB71476EB              Seq:  16     11:10:53 06 Aug 13   HG
                          Fluid1(8/2/13)
Hg   -.049    ppb       .000     -.049
                                                                        =
================================================================================
*** Sample ID: E3185-07               Seq:  17     11:12:53 06 Aug 13   HG
                          SS-15-TP-COMP
Hg   -.140    ppb       .000     -.140
                                                                        =
*** Check Standard: 2  Ck25.0ppb     Seq:  18     11:15:13 06 Aug 13   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          100.     5.02    5.00   ppb        .000
                                                                        =
*** Check Standard: 1  Ck10.0ppb     Seq:  19     11:17:03 06 Aug 13   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg         -.110     .200     ppb        .000
                                                                        =
*** Sample ID: E3160-01              Seq:  20     11:18:54 06 Aug 13   HG
                          JBT5I-CARBON18
Hg   -.106    ppb       .000     -.106
                                                                        =
================================================================================
*** Sample ID: E3175-01              Seq:  21     11:20:35 06 Aug 13   HG
                            WC1
Hg   -.142    ppb       .000     -.142
                                                                        =
================================================================================
*** Sample ID: E3176-01              Seq:  22     11:22:18 06 Aug 13   HG
                          BF003(070313)
Hg   -.242    ppb       .000     -.242
                                                                        =
================================================================================
*** Sample ID: E3183-02              Seq:  23     11:23:57 06 Aug 13   HG
                          SW-03-080213
Hg   -.304    ppb       .000     -.304
                                                                        =
================================================================================
*** Sample ID: E3183-02D             Seq:  24     11:25:59 06 Aug 13   HG
                          SW-03-080213DUP
Hg   -.302    ppb       .000     -.302
                                                                        =
================================================================================
*** Sample ID: E3183-02S             Seq:  25     11:27:42 06 Aug 13   HG
                          SW-03-080213MS
Hg    3.64    ppb       .000      3.64
                                                                        =
================================================================================
*** Sample ID: E3183-02SD            Seq:  26     11:29:24 06 Aug 13   HG
                          SW-03-080213MSD
Hg    3.58    ppb       .000      3.58
                                                                        =
```

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-------------------------------------------------------------------------------

*** Check Standard: 2  Ck25.0ppb    Seq:  27      11:32:06 06 Aug 13   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          102.     5.10    5.00   ppb         .000
                                                                            =
*** Check Standard: 1  Ck10.0ppb    Seq:  28      11:33:57 06 Aug 13   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg         -.088      .200     ppb         .000
                                                                            =
*** Sample ID: E3183-02A             Seq:  29      11:36:08 06 Aug 13   HG

Hg    3.76    ppb       .000      3.76
                                                                            =
===============================================================================
*** Sample ID: E3183-02L             Seq:  30      11:37:48 06 Aug 13   HG

Hg    -.146    ppb       .000     -.146
                                                                            =
===============================================================================
*** Sample ID: E3183-03              Seq:  31      11:39:28 06 Aug 13   HG
                           SW-03-080213
Hg    -.315    ppb       .000     -.315
                                                                            =
===============================================================================
*** Sample ID: E3187-13              Seq:  32      11:41:20 06 Aug 13   HG
                          EQUIPMENTBLANK
Hg    -.306    ppb       .000     -.306
                                                                            =
*** Check Standard: 2  Ck25.0ppb    Seq:  33      11:43:30 06 Aug 13   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          101.     5.05    5.00   ppb         .000
                                                                            =
*** Check Standard: 1  Ck10.0ppb    Seq:  34      11:45:45 06 Aug 13   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg         -.104      .200     ppb         .000
                                                                            =
```

START : 13:00 END : 16:15

CHEMTECH

MERCURY PREPARATION WORKSHEET

PB71498

7470A

SOP: M Revision:

M7470A - Mercury -13

Batch # PB71498

Bath Temprature: —

Digestion Time: In: 13:40 Out: 15:40

Block Temprature: 95°C

Supervisor Signature:

Balance Check: (0.2G): —

Acceptance Range 0. 199-0.201 gram

Dig Technician Signature:

Date: 8/5/2013 12:07:00 PM

Final Volume: 30 ML

Sample Received By:

STANDARD NAME	MLS USED	STD REF. # FROM LOG
Blank Spike	0.48mL	MP17289
Matrix Spike	0.48mL	MP17289
ICV	30mL	MP17296
CCV	30mL	MP17298
CRA	30mL	MP17300

CHEMICAL USED	ML/SAMPLE USED	LOT NUMBER
HNO3/H2SO4 1:2	3.0mL	MP17275
KMN04	4.5mL	MP17223
K2S2O8	3.0mL	MP17140
Hydroxylamine HCL	2.0mL	MP17242
		MB 8/5/13

MB 8/5/13

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	Wt(g)/Vol(ml)	COMMENTS
BLK 0.0 ppb	S0	Water	30	
Std1 0.2 ppb	S0.2			
Std2 2.5 ppb	S2.5			
Std3 5.0 ppb	S5.0			
Std4 7.5 ppb	S7.5			
Std5 10.0 ppb	S10.0			
ICV	ICV			
ICB	ICB			
CCV	CCV			
CCB	CCB			
CRI	CRA / CRI			
CHK STD	CHK STD			

MB 8/5/13

Date/Time	Received By	Relinquished By	Location
8/6/13 9:00			Mercury Lab
	Analysis Group	Digestion Group	
	PM, JR	BP, NP, RD, MR	

CHEMTECH

MERCURY PREPARATION WORKSHEET

MB 8/5/13

PB71498

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST	MATRIX	Wt(g)/Vol(ml)	PH	COMMENTS	Prep Pos
E3160-01	JBT5I-CARBON18	TCLP Mercury	~~Solid~~ L	3	<2		
E3175-01	WC1	TCLP Mercury	~~Solid~~ L	3	<2		
E3176-01	BF003(070313)	SPLP Mercury	~~Solid~~ L	30	<2		
E3183-02	SW-03-080213	Mercury	Water	30	<2		
E3183-02DUP	SW-03-080213DUP	Mercury	~~Solid~~ L	30	<2		
E3183-02MS	SW-03-080213MS	Mercury	~~Solid~~ L	30	<2	MP17289	
E3183-02MSD	SW-03-080213MSD	Mercury	~~Solid~~ L	30	<2	MP17289	
E3183-03	SW-03-080213	Dissolved Mercury	Water	30	<2		
E3185-07	SS-15-TP-COMP	TCLP Mercury	~~Solid~~ L	3	<2		
E3187-13	EQUIPMENTBLANK	Mercury	Water	30	<2		
PB71498BL	~~PBS~~ PBW	Mercury	~~Solid~~ L	30	<2		
PB71498BS	~~LCSS~~ LCSW	Mercury	~~Solid~~ L	30	<2	MP17289	
~~PB71498TB~~ PB71473 EB	~~PB71498TB~~ Fluid 1 (8/2/13)	Mercury	Solid L	3	<2		
PB71476 EB	Fluid 1 (8/2/13)			30	<2	—	

MB 8/5/13

MB 8/5/13

* BL=Blank * BS=Blank Spike * TB=TCLP Blank

CHEMTECH

MERCURY PREPARATION WORKSHEET

MB 5/5/13

PB71498

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST	MATRIX	Wt(g)/Vol(ml)	PH	COMMENTS	PREP Pos
E3160-01	JBT5I-CARBON18	TCLP Mercury	~~Solid~~ L	3	<2		
E3175-01	WC1	TCLP Mercury	~~Solid~~ L	3	<2		
E3176-01	BF003(070313)	SPLP Mercury	~~Solid~~ L	30	<2		
E3183-02	SW-03-080213	Mercury	Water L		<2		
E3183-02DUP	SW-03-080213DUP	Mercury	~~Solid~~ L		<2		
E3183-02MS	SW-03-080213MS	Mercury	~~Solid~~ L		<2	MP17289	
E3183-02MSD	SW-03-080213MSD	Mercury	~~Solid~~ L		<2	MP17289	
E3183-03	SW-03-080213	Dissolved Mercury	Water		<2		
E3185-07	SS-15-TP-COMP	TCLP Mercury	~~Solid~~ L	3	<2		
PB71498BL	~~PBS~~ PBW	Mercury	~~Solid~~ L	30	<2		
PB71498BS	~~LCSS~~ LCSW	Mercury	~~Solid~~ L	30	<2	MP17289	
~~PB71498TB~~ PB71473 CB	~~PB71498TB~~ Fluid 1 (5/2/13)	Mercury	~~Solid~~ L	3	<2		
E3187-13				30	<2		
PB71476 CB	Fluid 1 (5/2/13)		L	30	<2		

MB 5/5/13

* BL=Blank * BS=Blank Spike * TB=TCLP Blank

WORKLIST(Hardcopy Internal Chain)

PB71498

WorkList Name : 080513_7470 WorkList ID : 58926 Date : 8/5/2013 11:56:49 AM

Due Date	Matrix	Sample	Test	Preservative	Customer	Storage Location	Customer Sample	Collect Date	Method
08/06/2013	Solid	E3160-01	TCLP Mercury	Cool	LIRO01	L63	JBT5I-CARBON18	08/01/2013	7470A
08/15/2013	Solid	E3175-01	TCLP Mercury	Cool	GENV01	M13	WC1	08/01/2013	7470A
07/08/2013	Solid	E3176-01	SPLP Mercury	Cool	CREA02	J51	BF003(070313)	07/03/2013	7471A
08/16/2013	Water	E3183-02	Mercury 0.D, 5, 5D	1:1	LAWL01	M21	SW-03-080213	08/02/2013	7470A
08/16/2013	Water	E3183-03	Dissolved Mercury	1:1	LAWL01	M21	SW-03-080213	08/02/2013	7470A
08/07/2013	Solid	E3185-07	TCLP Mercury	Cool	CTMA01	M32	SS-15-TP-COMP	08/02/2013	7470A
08/16/2013	Water	E3187-13	Mercury	1:1	LABE01	M32	EQUIPMENTBLANK	08/02/2013	7470A

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Date/Time 08/05/13 @ 12:30
Received by: MB
Relinquished by:

Date/Time 08/05/13 @ 14:00
Received by:
Relinquished by: MB

CHEMTECH **TCLP EXTRACTION LOGPAGE**

PB71473

SOP ID: M M/3/1 TCLP -07

Matrix : Solids

Clean Up SOP #: N/A,

Batch# PB71473

Extraction Date : in 08/02/2013 out 8-3-13

Extraction Time : in 17:15 out 11:30Am

Review By : [signature]

Weigh By: [signature] **Extraction By:** [signature]

Balance check: PJ 400 100.00 100.02

Chemical Used	ML/SAMPLE USED	Lot Number
TCLP-FLUID-1	NA	WP27575
HCL-TCLP,1N	NA	WP27526
HNO3-TCLP,1N	NA	WP27527

Prep Pos :

KD Bath Temperature: NA C

Envap Temperature: NA C

Received Date: 8-2-13

Received By: [signature]

Delivered Date: 8-5-13

Delivered By: [signature] 8/05

RPM 30 Per minute

7-9-13 Check every 3 month

Analysis Group :

Extraction Group :

CHEMTECH 284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

TCLP Solid Determination

Analyst JM Supervisor Review: MB

Preparation Date: 08/02/2013 Preparation Time: 17:15

Initial Room Temperature:	24 °C	Final Room Temperature:	24 °C

JM 8-5-13

Sample Number	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
E3176-01	NA	NA	NA	NA	100	NA

CHEMTECH 284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

TCLP Fluid Determination

Analyst JM Supervisor Review: MB

Preparation Date: 08/02/2013 Preparation Time: 17:15

Initial Room Temperature:	24°C	Final Room Temperature:	24°C

Sample Number	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or	pH Extraction
E3176-01	5.04	100	5.57	NA	SPLP	4.20

ALL PHs checked with WC PH meter 1

CHEMTECH **TCLP EXTRACTION LOGPAGE**

SOP ID: M M1312 - SPLP-05

Matrix : SOLIDS

Clean Up SOP #: NA

Weigh By: Jm **Extraction By:** Jm

Batch# PB71476

Extraction Date : in 8-2-13 8-3-13 out

Extraction Time : in 5:15PM 11:30AM out

Review By :

PJ 400 **Balance check:** 200.00 200.02

Chemical Used	ML/SAMPLE USED	Lot Number
SPLP FLUID	NA	WP27424

Prep Pos :

KD Bath Temperature: NA C

Received Date: 8-2-13

Delivered Date: 8-5-13

RPM 30 Per minute

7-9-13 check every 3 Month

Envap Temperature: NA C

Received By: BL

Delivered By: Jm

Analysis Group :

Extraction Group :

CHEMTECH **TCLP EXTRACTION LOGPAGE**

PrepBatch ID : PB71476

Analytical Method: 1312 **Extraction Date:** 8-2-13 **Concentration Date:** / NA

Sample Number	Sample Weight (g)	Volume Extraction Fluid #1 (mL)	Multiphasic	Phase Miscible	Phases Combined	Final Leachate PH	Prep Pos
E3176-01	100.06	2000	NA	NA	NA	5.57 1.77	
BLANK	NA	2000	NA	NA	NA	4.20 1.51	

All PHs checked with WC PH Meter 1

E3176-01 MS/MSD matrix spike are added after Filtration & before preservation

* Extracts relinguished on the same date as received.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: CV2

Daily Analysis Runlog For Sequence/QCBatch ID # LB67182

Review By jaswal Review On 8/6/2013 2:23:08 PM

STD. NAME	STD REF.#
ICAL Standard	MP17289,MP17290,MP17291,MP17292,MP17293,MP17294,MP17295
ICV Standard	MP17296
CCV Standard	MP17298
ICSA Standard	
CRI Standard	MP17300
Chk Standard	MP17301,MP17297,MP17299,MP17303

Sr#	SampleId	ClientID	QcType	Date	Comment	Status
1	Std01Rep1	Std01Rep1	CAL	08/06/13 10:35		OK
2	Std02Rep1	Std02Rep1	CAL	08/06/13 10:37		OK
3	Std03Rep1	Std03Rep1	CAL	08/06/13 10:38		OK
4	Std04Rep1	Std04Rep1	CAL	08/06/13 10:41		OK
5	Std05Rep1	Std05Rep1	CAL	08/06/13 10:43		OK
6	Std06Rep1	Std06Rep1	CAL	08/06/13 10:45		OK
7	ICV1	ICV01	ICV	08/06/13 10:50		OK
8	ICB1	ICB01	ICB	08/06/13 10:53		OK
9	CCV1	CCV01	CCV	08/06/13 10:55		OK
10	CCB1	CCB01	CCB	08/06/13 10:57		OK
11	CRDL1	CRI01	CRDL	08/06/13 10:58		OK
12	HIGH STD	HIGH STD	HIGH CAL	08/06/13 11:00		OK
13	CHK STD	CHK STD	SAM	08/06/13 11:03		OK
14	PB71498BL	PB71498BL	MB	08/06/13 11:05		OK
15	PB71498BS	PB71498BS	LCS	08/06/13 11:06		OK
16	EXTBLK(8/2/13)	EXTBLK(8/2/13)	MB	08/06/13 11:09		OK
17	EXTBLK(8/2/13)	EXTBLK(8/2/13)	MB	08/06/13 11:10		OK
18	E3185-07	SS-15-TP-COMP	SAM	08/06/13 11:12		OK
19	CCV2	CCV02	CCV	08/06/13 11:15		OK
20	CCB2	CCB02	CCB	08/06/13 11:17		OK
21	E3160-01	JBT5I-CARBON18	SAM	08/06/13 11:18		OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: CV2

Daily Analysis Runlog For Sequence/QCBatch ID # LB67182

Review By	jaswal	Review On	8/6/2013 2:23:08 PM

STD. NAME	STD REF.#
ICAL Standard	MP17289,MP17290,MP17291,MP17292,MP17293,MP17294,MP17295
ICV Standard	MP17296
CCV Standard	MP17298
ICSA Standard	
CRI Standard	MP17300
Chk Standard	MP17301,MP17297,MP17299,MP17303

22	E3175-01	WC1	SAM	08/06/13 11:20		OK
23	E3176-01	BF003(070313)	SAM	08/06/13 11:22		OK
24	E3183-02	SW-03-080213	SAM	08/06/13 11:23		OK
25	E3183-02D	SW-03-080213D	DUP	08/06/13 11:25		OK
26	E3183-02S	SW-03-080213S	MS	08/06/13 11:27		OK
27	E3183-02SD	SW-03-080213SD	MSD	08/06/13 11:29		OK
28	CCV3	CCV03	CCV	08/06/13 11:32		OK
29	CCB3	CCB03	CCB	08/06/13 11:33		OK
30	E3183-02A	SW-03-080213A	PS	08/06/13 11:36		OK
31	E3183-02L	SW-03-080213L	SD	08/06/13 11:37		OK
32	E3183-03	SW-03-080213	SAM	08/06/13 11:39		OK
33	E3187-13	EQUIPMENTBLANK	SAM	08/06/13 11:41		OK
34	CCV4	CCV04	CCV	08/06/13 11:43		OK
35	CCB4	CCB04	CCB	08/06/13 11:45		OK

CHEMTECH **TCLP EXTRACTION LOGPAGE**

SOP ID: M M1312 - SPLP-05

Matrix : SOLIDS

Clean Up SOP #: NA

Weigh By: Jm **Extraction By:** Jm

Batch# PB71476

Extraction Date : in 8-2-13 8-3-13 out

Extraction Time : in 5:15PM 11:30AM out

Review By :

PJ 400 **Balance check:** 200.00 200.02

Chemical Used	ML/SAMPLE USED	Lot Number
SPLP FLUID	NA	WP27424

Prep Pos :

KD Bath Temperature: NA C

Received Date: 8-2-13

Delivered Date: 8-5-13

RPM 30 Per minute

7-9-13 check every 3 Month

Envap Temperature: NA C

Received By: BL

Delivered By: Jm

Analysis Group :

Extraction Group :

CHEMTECH 284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

TCLP Solid Determination

Analyst JM Supervisor Review: MB

Preparation Date: 08/02/2013 Preparation Time: 17:15

Initial Room Temperature:	24 °C	Final Room Temperature:	24 °C

JM 8-5-13

Sample Number	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
E3176-01	NA	NA	NA	NA	100	NA

CHEMTECH 284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

TCLP Fluid Determination

Analyst JM Supervisor Review: MB

Preparation Date: 08/02/2013 Preparation Time: 17:15

Initial Room Temperature:	24°C	Final Room Temperature:	24°C

Sample Number	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or	pH Extraction
E3176-01	5.04	100	5.57	NA	SPLP	4.20

ALL PHs checked with WC PH meter 1

CHEMTECH **TCLP EXTRACTION LOGPAGE**

PrepBatch ID : PB71476

Analytical Method: 1312 **Extraction Date:** 8-2-13 **Concentration Date:** / NA

Sample Number	Sample Weight (g)	Volume Extraction Fluid #1 (mL)	Multiphasic	Phase Miscible	Phases Combined	Final Leachate PH	Prep Pos
E3176-01	100.06	2000	NA	NA	NA	5.57 1.77	
BLANK	NA	2000	NA	NA	NA	4.20 1.51	

All PHs checked with WC PH Meter 1

E3176-01 MS/MSD matrix spike are added after Filtration & before preservation

* Extracts relinguished on the same date as received.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Prep Standard - Chemical Standard Summary

Order ID : E3176

Test : SPLP Mercury

Prepbatch ID : PB71498,

Sequence ID/Qc Batch ID: LB67182,

Standard ID :
MP17140,MP17223,MP17242,MP17275,MP17289,MP17290,MP17291,MP17292,MP17293,MP17294,MP17295,MP17296,
MP17297,MP17298,MP17299,MP17300,MP17301,MP17303,

Chemical ID :
M1690,M2088,M2204,M2638,M2764,M2804,M2857,M2906,M2912,M2914,W1152,

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
897	5%POTTASIUM PERSULFATE SOLUTION.	MP17140	07/24/2013	01/24/2014	mohan

FROM 100.000ml of M1690(Potassium Persulfate (2.5kg)) + 2000.000ml of W 1152(DI Water) = Final Quantity: 2000.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP17223	07/31/2013	01/31/2014	mohan

FROM 100.000gram of M2764(Potassium permanganate) + 2000.000ml of W 1152(DI Water) = Final Quantity: 2000.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
67	SODIUM CHLORIDE - HYDROXYL-CHLORIDE SOLUTION	MP17242	08/01/2013	02/01/2014	mohan

FROM 2000.000ml of W1152(DI Water) + 240.000gram of M2204(Sodium Chloride, Crystal (cs/4x2.5kg)) + 240.000gram of M2804(Hydroxylamine Hydrochloride, Crystal (cs/4x500g)) = Final Quantity: 2000.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
896	2:1 H2SO4 : HN03	MP17275	08/02/2013	02/02/2014	mohan

FROM 1600.000ml of M2088(Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)) + 800.000ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) = Final Quantity: 2400.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP17289	08/05/2013	08/06/2013	Julles

FROM 1.000ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 2.500ml of M2857(MERCURY HCl 125mL 10ug/mL) + 96.500ml of W1152(DI Water) = Final Quantity: 100.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1340	Hg 0.00 PPB STD	MP17290	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 247.500ml of W1152(DI Water) = Final Quantity: 250.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1341	Hg 0.2 PPB STD	MP17291	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 247.300ml of W1152(DI Water) + 0.200ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1342	Hg 2.5 PPB STD	MP17292	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 245.000ml of W1152(DI Water) + 2.500ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1343	Hg 5.0 PPB STD	MP17293	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 242.500ml of W1152(DI Water) + 5.000ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1344	Hg 7.5 PPB STD	MP17294	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 240.000ml of W1152(DI Water) + 7.500ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1345	Hg 10.0 PPB STD	MP17295	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 237.500ml of W1152(DI Water) + 10.000ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1346	Hg ICV SOLUTION	MP17296	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2638(ICV (HG) STOCK SOLN) + 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 245.000ml of W1152(DI Water) = Final Quantity: 250.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP17297	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 247.500ml of W1152(DI Water) = Final Quantity: 250.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP17298	08/05/2013	08/06/2013	Julles

FROM 485.000ml of W1152(DI Water) + 5.000ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 10.000ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 500.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP17299	08/05/2013	08/06/2013	Julles

FROM 495.000ml of W1152(DI Water) + 5.000ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) = Final Quantity: 500.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP17300	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 247.300ml of W1152(DI Water) + 0.200ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP17301	08/05/2013	08/06/2013	Julles

FROM 2.500ml of M2914(Nitric Acid, Instra-Analyzed (cs/4x2.5L)) + 240.500ml of W1152(DI Water) + 7.000ml of MP17289(MERCURY INTERMEDIATE B 250PPB WORKING STD.) = Final Quantity: 250.000 ml

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
68	STANNOUS CHLORIDE SOLUTION	MP17303	08/06/2013	08/07/2013	Julles

FROM 450.000ml of W1152(DI Water) + 50.000gram of M2912(Stannous Chloride (cs/4x500g)) + 50.000ml of M2906(Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)) = Final Quantity: 500.000 ml

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3238-05 / Potassium Persulfate (2.5kg)	J35595	12/10/2015	10/03/2012 / JULLES	12/10/2010 / alpa	M1690

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	K18F01	10/28/2016	03/08/2012 / BHUPENDRA	10/28/2011 / ALPA	M2088

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	k34600	12/16/2016	02/14/2013 / mohan	12/16/2011 / ALPA	M2204

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5(0508) / ICV (HG) STOCK SOLN	ICV5-0508	11/06/2017	04/10/2013 / mohan	11/06/2012 / Julles	M2638

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
J.T.Baker	3227-01 / Potassium permanganate	K48609	01/04/2018	06/21/2013 / mohan	01/04/2013 / EDWIN	M2764

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000019333	01/11/2018	07/09/2013 / MOHAN	01/11/2013 / EDWIN	M2804

E3176 - SPLP Mercury

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	F2-HG02097	04/01/2014	05/21/2013 / mohan	03/26/2013 / Julles	M2857

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000040272	07/17/2018	07/26/2013 / BHUPENDRA	07/17/2013 / bhupendra	M2906

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	0000014329	07/24/2018	08/02/2013 / Julles	07/24/2013 / mohan	M2912

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	0000042514	08/01/2018	08/02/2013 / bhupendra	08/01/2013 / Julles	M2914

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Res-Kem General water	DIW / DI Water	Lab certified	02/23/2015	02/23/2010 /	02/23/2010 / divya	W1152

E3176 - SPLP Mercury

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Part of AVANTOR™ PERFORMANCE MATERIALS

Material No.: 2196-01
Batch No.: 0000019333
Manufactured Date: 2012/05/22
Retest Date: 2017/05/21

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	< 0.010
Titrable Free Acid (meq/g)	<= 0.25	< 0.25
Ammonium (NH_4)	Passes Test	PT
Sulfur Compounds (as SO_4)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	< 3
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	0.050

For Laboratory, Research, or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

MZ800, MZ801, MZ802, MZ803
MZ804, MZ805, MZ806, MZ807

JR
1/11/13

ISO

Phillipsburg, NJ 9001.2008, 14001.2004
Paris, KY 9001.2008
Mexico city, Mexico 9001.2008
Deventer, The Netherlands 9001.2008, 14001.2004
Selangor, Malaysia 9001.2008
Panoli, India 9001.2008
Gliwice, Poland 9001.2008,17025.2005

Richard M Siberski
Global Director of Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
Avantor ™ Performance Materials Inc.
3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 • USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 • 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 **INORGANIC VENTURES** is an ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" and ISO 9001 registered manufacturer. Our manufacturing laboratory is accredited to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories."

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 **DESCRIPTION OF CRM** **10 µg/mL Mercury in 10% (v/v) HCL**

Catalog Number:	MSHG-10PPM
Lot Number:	F2-HG02097
Starting Material:	Hg metal
Starting Material Purity (%):	100.0000
Starting Material Lot No:	R307HGA1
Matrix:	10% (v/v) HCL

M2857 Rec'd: 3/26/13
Exp: 4/1/14

3.0 **CERTIFIED VALUES AND UNCERTAINTIES**

Certified Concentration: 9.990 ± 0.074 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1°C)

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\Sigma x_i}{n}$ ($\bar{x}$) = mean

x_i = individual results

n = number of measurements

Uncertainty (±) = $2 [\Sigma(s_i)^2]^{½}$ 2 = the coverage factor.

$[\Sigma(s_i)^2]^{½}$ = The square root of the sum of the squares of the most common errors (where 's' stands for the standard deviation) from instrumental measurement, density, NIST SRM uncertainty, weighing, dilution to volume, homogeneity, long term stability and short term stability.

4.0 **TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS**

- "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)
- This product is Traceable to NIST via an unbroken chain of comparisons to the following NIST SRMs:

JR
3/27/13

4.1	ELEMENT	METHOD	NIST SRM#	SRM LOT#
	Hg	ICP Assay	3133	061204
	Hg	EDTA	928	928

4.2 **BALANCE CALIBRATION -** All analytical balances are calibrated yearly by an A2LA accredited calibration laboratory and are traceable to a class E 2 analytical weight set with NIST Traceability. All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST).

4.3 **THERMOMETER CALIBRATION -** All thermometers are NIST traceable through thermometers that are calibrated by an A2LA accredited calibration laboratory.

4.4 **GLASSWARE CALIBRATION -** An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM's.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP/MS AND ICP-OES IN µg/mL

Standard solutions are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.0041260	M	Cu	< 0.0123790	M	La	< 0.0010320	M	Pr	< 0.0006190	M	Ta	< 0.0144420
O	Al	< 0.0000900	M	Dy	< 0.0123790	O	Li	< 0.0000200	M	Pt	< 0.0041260	M	Tb	< 0.0006190
M	As	< 0.0206320	M	Er	< 0.0103160	M	Lu	< 0.0008250	M	Rb	< 0.0020630	M	Te	< 0.0618960
M	Au	< 0.0061900	M	Eu	< 0.0061900	O	Mg	< 0.0000300	M	Re	< 0.0020630	M	Th	< 0.0020630
M	B	< 0.1444230	O	Fe	< 0.0011000	M	Mn	< 0.0082530	M	Rh	< 0.0020630	M	Ti	< 0.1031590
M	Ba	< 0.0206320	M	Ga	< 0.0020630	M	Mo	< 0.0041260	M	Ru	< 0.0041260	O	Tl	< 0.0060000
M	Be	< 0.0010320	M	Gd	< 0.0020630	O	Na	0.0000020	O	S	< 0.0250000	M	Tm	< 0.0008250
M	Bi	< 0.0008250	O	Ge	< 0.0180000	M	Nb	< 0.0010320	M	Sb	< 0.0010320	M	U	< 0.0041260
O	Ca	0.0000020	M	Hf	< 0.0041260	M	Nd	< 0.0041260	M	Sc	< 0.0206320	M	V	< 0.0041260
O	Cd	< 0.0046000	s	Hg		O	Ni	< 0.0010000	M	Se	< 0.0165050	M	W	< 0.0206320
M	Ce	< 0.0103160	M	Ho	< 0.0010320	n	Os		O	Si	< 0.0034000	M	Y	< 0.0825270
M	Co	< 0.0061900	M	In	< 0.0206320	O	P	< 0.0026000	M	Sm	< 0.0020630	M	Yb	< 0.0020630
M	Cr	< 0.0103160	M	Ir	< 0.0103160	M	Pb	< 0.0061900	M	Sn	< 0.0103160	M	Zn	< 0.0412640
M	Cs	< 0.0006190	O	K	< 0.0020000	O	Pd	< 0.0038000	M	Sr	< 0.0010320	M	Zr	< 0.0103160

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

For the calibration of analytical instruments including but not limited to the following:
HPLC, IC, TLC, ISE, IR, NMR, UV/VIS, MS, Capillary Electrophoresis, Potentiometry, Wet Chemistry and Voltammetry
For the validation of analytical methods
For the preparation of "working reference samples"
For interference studies and the determination of correction coefficients
For detection limit and linearity studies
For additional intended uses, contact Technical Staff

This CRM was manufactured using 18 megohm doubly deionized water that has been filtered through a 0.2 micron filter.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep tightly sealed when not in use. Store and use at 20 ± 4°C. Do not pipet from container. Do not return portions removed for pipetting to container.
Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59; +2; **4** ; Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water. .
Stability - 2-100 ppb levels **not stable** in 1% HNO3 / LDPE container, ***stable*** in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Type	Interferences (underlined indicates severe)
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	atom	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	ion	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	atom	Ta, Co, Th ,Rh , Fe, U
ICP-MS 202 amu	9 ppt	n/a	M+	186W16O

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 HOMOGENEITY - This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Inorganic Ventures homogeneity data indicate that the end user should take a minimum sample size of 0.2mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration
- QMI File Number 010105

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration"
- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"
- Reference Materials Production - Accredited A2LA Certificate Number 883.02

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission
- Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission
- Reporting Defects and Non-Compliance

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability.

11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

11.3 Chemical Stability - Studies have been conducted on this or similar CRMs and it has been demonstrated that this CRM is chemically stable for a period of not less than two years provided the "Storage & Handling" conditions are followed that are described in section 7.0.

Certification Date: March 09, 2012

Expiration Date: EXPIRES 01 APR 2014

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Danny Feeny
Product Documentation Technician

Certificate Approved By: Brian Alexander
PhD., Quality Control Supervisor

Certifying Officer: Paul Gaines
PhD., Senior Technical Director

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
(For Trace Metal Analysis)

J.T.Baker®

Part of AVANTOR™ PERFORMANCE MATERIALS

Material No.: 9530-33
Batch No.: 0000040272
Manufactured Date: 2013/03/18
Retest Date: 2018/03/17

M2906
Reci'd. 7/17/13 By.

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.3
ACS - Color (APHA)	<= 10	<5
ACS - Residue after Ignition	<= 3 ppm	<1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.189
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	<1
ACS - Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	<1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	<0.001
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	0.6
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	9.0
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	<0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

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Avantor ™ Performance Materials Inc.
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Stannous Chloride, Dihydrate, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(tin(II) chloride, dihydrate)

J.T.Baker®

Part of AVANTOR™ PERFORMANCE MATERIALS

M2912
Received on: 07/24/13
Expire Date: 07/24/18

Material No.: 3980-01
Batch No.: 0000014329
Manufactured Date: 2012/03/30
Retest Date: 2017/03/29

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($SnCl_2 \cdot 2H_2O$)	98.0 - 103.0 %	100.4
Solubility in HCl	Passes Test	PT
Sulfate (SO_4)	Passes Test	PT
ACS - Calcium (Ca)	<= 0.005 %	0.001
Iron (Fe)	<= 0.003 %	0.002
Lead (Pb)	<= 0.01 %	0.00
Magnesium (Mg)	<= 0.01 %	< 0.00
Potassium (K)	<= 0.005 %	< 0.001
Sodium (Na)	<= 0.01 %	0.00
Trace Impurities - Arsenic (As)	<= 2.000 ppm	2.000
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	0.010

For Laboratory, Research, or Manufacturing Use

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001.2008, 14001.2004
Paris, KY 9001.2008
Mexico city, Mexico 9001.2008
Deventer, The Netherlands 9001.2008, 14001.2004
Selangor, Malaysia 9001.2008
Panoli, India 9001.2008
Gliwice, Poland 9001.2008,17025.2005

Richard M Siberski
Global Director of Quality Assurance

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3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

Nitric Acid, 69.0-70.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Part of AVANTOR™ PERFORMANCE MATERIALS

M2914
Recv'd: 8/1/13
Exp: 8/1/18

Material No.: 9598-34
Batch No.: 0000042514
Manufactured Date: 2013/04/04
Retest Date: 2018/04/03

Certificate of Analysis

Test	Specification	Result
ACS - Assay (HNO_3)	69.0 - 70.0 %	69.8
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	<5
ACS - Residue after Ignition	<= 2 ppm	<1
ACS - Specific Gravity at 60°/60°F	1.416 - 1.420	1.420
Chloride (Cl)	<= 0.04 ppm	< 0.03
Phosphate (PO_4)	<= 0.1 ppm	<0.01
Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	< 5.0
Arsenic and Antimony (as As)	<= 5 ppb	< 2
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 1.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 4.0 ppb	< 0.7
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	3.0
Trace Impurities - Chromium (Cr)	<= 10.0 ppb	< 1.0
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	<0.1
Trace Impurities - Gallium (Ga)	<= 20.0 ppb	< 1.0
Trace Impurities - Germanium (Ge)	<= 4.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 10.0 ppb	1.0

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Avantor ™ Performance Materials Inc.
3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

Material No.: 9598-34
Batch No.: 0000042514

Test	Specification	Result
Trace Impurities - Lead (Pb)	<= 0.5 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 7.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 1.0
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	<0.1
Trace Impurities - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Trace Impurities - Nickel (Ni)	<= 1.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	0.2
Trace Impurities - Potassium (K)	<= 5.0 ppb	< 2.0
Trace Impurities - Silicon (Si)	<= 20.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 200.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 2.0 ppb	< 2.0
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	< 0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	<0.1

For Laboratory, Research or Manufacturing Use
Meets ACS Specifications

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 17025:2005
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008, 17025:2005
Panoli, India 9001:2008

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QATS INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICVs)

M2637 - M2639

JR
recv'd 11/6/12

ICV4-0499	
Element	Concentration (µg/L) (after 10 fold dilution)
Cd	98.7
Pb	99.8
Ag	101.9
Tl	98.8

ICV5-0508	
Element	Concentration (µg/L) (after 100 fold dilution)
Hg	4.0

ICV6-0400	
Element	Concentration (µg/L) (after 100 fold dilution)
CN-	99

SHIPPING DOCUMENTS

~~Received~~

E3176

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. E2828
COC Number 029905

CLIENT INFORMATION (REPORT TO BE SENT TO:)
COMPANY: Creamer Environmental
ADDRESS: 215 Union St
CITY: Hackensack STATE: NJ ZIP: 07601
ATTENTION: 12-2260
PHONE: 201-968-3300 FAX: 201-968 3301

CLIENT PROJECT INFORMATION
PROJECT NAME: ARC Horseshoe Road
PROJECT NO.: 12-2260 LOCATION: Saybeville
PROJECT MANAGER: Gary Kowalski
e-mail: GKowalski@CreamerEnvironmental
PHONE: 201-491-9308 FAX:

CLIENT BILLING INFORMATION
BILL TO: Creamer Environmental PO#:
ADDRESS: 215 Union Street
CITY: Hackensack STATE: NJ ZIP: 07601
ATTENTION: 12-2260 PHONE: 201-968-3300

DATA TURNAROUND INFORMATION
FAX: ____ DAYS *
HARD COPY: ____ DAYS *
EDD: ____ DAYS *
PREAPPROVED TAT: ☐ YES ☒ NO STANDARD
* STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION
☐ LEVEL 1: Results only ☐ Others ____
☐ LEVEL 2: Results + QC
☐ LEVEL 3: Results (plus results raw data) + QC
☐ LEVEL 4: Results + QC (all raw data)
☐ EDD Format: ____

ANALYSIS
1 TCL VOCs
2 TCL SVOCs
3 TAL Metals
4 Cyanide + Mercury
5 TCL Pest + PCB
6 EPH Cat 1
7 Ya-226
8 STLP Metals (Hold)
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	BF003(070313)	Soil		X	7/3/13			X	X	X	X	X	X	X	Hold		
2. *	BF004(070313)	Soil		X	7/3/13			X	X	X	X	X	X	X	Hold		
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES: 1 2 3 4 5 6 7 8 9
COMMENTS — Specify Preservatives: A–HCl B–HNO_3 C–H_2SO_4 D–NaOH E–ICE F–Other

Copy
Original Documents are included in CSF E2828

PS
Signature
8/2/13
Date

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. V. Alhanese	7/3/13 1430	1.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2.		2.
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3.	7.3.13 1520	3. Snehal Mehta

Conditions of bottles or coolers at receipt: ☑ Compliant ☐ Non Compliant Cooler Temp. 4c
MeOH extraction requires an additional 4 oz jar for percent solid. Ice in Cooler?: Yes
Comments:

Page ____ of ____

SHIPPED VIA: CLIENT: ☐ HAND-DELIVERED ☐ OVERNIGHT CHEMTECH: ☑ PICKED UP ☐ OVERNIGHT Shipment Complete: ☑ YES ☐ NO

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

Reginald St-Juste

From: Kowalski, Gary <GKowalski@creamerenvironmental.com>
Sent: Friday, August 02, 2013 11:44 AM
To: Reginald@chemtech.net
Cc: Albanese, Vincent
Subject: RE: E2828 MDLs / Mercury SPL

3 day
Thanks

Gary Kowalski, Project Manager
CREAMER ENVIRONMENTAL, INC. (Headquarters)
215 Union Street
Hackensack, NJ 07601
"New" Direct Dial / E-Fax 201-215-9628
Mobile: 201-376-7153
Headquarters Tel: 201-968-3300
Headquarters Fax: 201-968-3301
www.creamerenvironmental.com

From: Reginald St-Juste [mailto:Reginald@chemtech.net]
Sent: Friday, August 02, 2013 12:41 PM
To: Kowalski, Gary
Cc: Albanese, Vincent
Subject: RE: E2828 MDLs / Mercury SPL
Importance: High

This data package was revised and uploaded on the website for the SVOC compounds mentioned below. A separate work order will be created for the SPLP mercury.

What TAT should we do for the SPLP Mercury?

Regards,
Reginald St-Juste
Project Manager
Tel. 908 728 3147
Email: Reginald@chemtech.net

From: Kowalski, Gary [mailto:GKowalski@creamerenvironmental.com]
Sent: Thursday, August 01, 2013 10:53 AM
To: reginald@chemtech.net

Cc: 'Franco Pugliese'; Albanese, Vincent
Subject: E2828 MDLs / Mercury SPL

Reggie,

The MDL for Benzo(a)pyrene and Dibenzo(a,h)anthracene were 0.090 mg/kg which was over the project standard of 0.05. these need to be rerun with the lower MDL.

The Mercury result for BF003 was 0.32 J which was over the IGW standard of 0.1, this needs to be rerun for SPL.

Please confirm,
Thanks,

Gary Kowalski, Project Manager
CREAMER ENVIRONMENTAL, INC. (Headquarters)
215 Union Street
Hackensack, NJ 07601
"New" Direct Dial / E-Fax 201-215-9628
Mobile: 201-376-7153
Headquarters Tel: 201-968-3300
Headquarters Fax: 201-968-3301
www.creamerenvironmental.com

E3176 client says per phone conversation 8-15-13 that for all purposes he ok with SPLP HG run out of holding time.

Laboratory Certification

State	License No.
New Jersey	20012
New York	11376
Connecticut	PH-0649
Florida	E87935
Louisiana	5035
Maryland	296
Massachusetts	M-NJ503
Oklahoma	9705
Pennsylvania	68-548
Rhode Island	LAO00259
Virginia	460220
Texas	T10470448-10-1

Other:

DOD ELAP Certified (L-A-B Accredited), ISO/IEC 17025	L2219
Soil Permit	P330-11-00012
CLP Inorganic Contract	EPW09038
CLP Organic Contract	EPW11030

QA Control Code: A2070148